Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1-5. (Canceled)

6. (Previously Presented) A laser means as in claim 42, wherein said second cylindrical lens collimates said beam into a collimated beam in a second plane perpendicular to the first plane.

7. (Previously Presented) The laser means as in claim 6, wherein said second cylindrical lens directs a plurality of said collimated beams to substantially a same spot.

8. (Previously Presented) The laser means as in claim 40, wherein said diode pumping array is held by a diode array mount and wherein said optical means comprises adjusting means for adjusting the axis of the pump light beam to a defined plane relative to the diode array mount, which adjusting means includes at least one wedged window.

9. (Withdrawn) The laser means as in claim 8, wherein said diode array, said diode array mount, said first cylindrical lens is positioned nearby the diode array, preferably at the diode array mount, and said adjusting means are fixed to a laser system base.

10. (Withdrawn) The laser means as in claim 9, wherein said adjusting means further comprises at least one parallel window.

11. (Withdrawn) The laser means as in claim 10, further comprising a mounting frame for holding said diode array mount and said at least one parallel window wherein said mounting frame has a contact plane for fixing said mounting frame to said laser system base.

12. (Withdrawn) The laser means as in claim 11, wherein said pumping device mounting frame has a side wall with an opening at which said at least one parallel window is arranged.

13. (Withdrawn) The laser means as in claim 11, wherein the pumping device mounting frame comprises three horizontal positioning areas and preferably three vertical positioning areas for mounting diode array pumping device at the laser system base in a defined position.

14. (Previously Presented) The laser means as claim 40, wherein said optical means comprises: a first lens for collimating said partial beam in the vertical and in the horizontal plane and directing the partial beam to said spot, the first lens being positioned at a distance away from the diode pumping array corresponding to a focal length of a cylindrical lens positioned at a distance away from the diode pumping array corresponding to a sum of a focal length of the first cylindrical lens and of twice the focal length of the first lens; and a focusing lens for collimating said partial beam in a first plane and for focusing the pump light beam in a second plane perpendicular to the first plane.

15. (Previously Presented) The laser means as in claim 40, wherein said diode pumping array comprises a laser diode bar generating said partial beams which are combined to a pump light beam.

16. (Previously Presented) The laser means as in claim 40 with an aspect ratio for the pump beam of >15:1.

17. (Previously Presented) The diode-pumped laser operating in the fundamental mode, comprising:

a laser means according to claim 40; and

a solid state laser medium which is excited by said laser means.

18. (Previously Presented) The diode-pumped laser as in claim 17, wherein the cross-section of said elliptical beam spot has an aspect ratio of >3:1.

19. (Previously Presented) The diode-pumped laser as in claim 17, wherein the thermal profile of the laser medium is smooth and enables fundamental mode laser operation.

20. (Previously Presented) The diode-pumped laser as in claim 17, wherein the laser mode is strongly elliptical within said laser medium.

21. (Previously Presented) The diode-pumped laser as in claim 20, wherein the aspect ratio for the laser mode is >5:1.

22. (Previously Presented) The diode-pumped laser as in claim 17, comprising cavity-forming means, whereby a reflective cavity element closest to an entrance face of said laser medium is not in direct contact with said entrance face.

23. (Previously Presented) The diode-pumped laser as in claim 17, wherein the axis of said pump beam is positioned obliquely or even vertically to the axis of the laser mode.

24. (Previously Presented) The diode-pumped laser as in claim 17, wherein said laser medium comprises Nd:Vanadate.

25. (Previously Presented) The diode-pumped laser as in claim 17, further comprising a semiconductor saturable absorber for obtaining a stable modelocked average output power of several Watts.

26. (Previously Presented) The diode-pumped laser as in claim 25, where stable modelocked operation is obtained at a pulse energy density on the semiconductor saturable absorber which is lower than 10 times a saturation energy density of said semiconductor saturable absorber.

27. (Previously Presented) The diode-pumped laser as in claim 25, where stable modelocked operation is obtained at a pulse energy density on the semiconductor saturable absorber which is lower than 0.5 mJ/cm^2.

28. (Previously Presented) A diode-pumped laser with a laser means as in claim 42, comprising at least one of a single-pass amplifier, a multi-pass amplifier and a

regenerative amplifier setup configured to generate at least one of micro-Joule- and milli-Joule-level laser pulse energies.

29. (Previously Presented) A solid state laser medium excited by a laser means according to claim 40 that is partly supported in at least two first regions contacting thermally conducting material, and with at least two second regions adjacent to said first regions, the surface of said second regions contacting material with low thermally conductivity.

30. (Previously Presented) The solid state laser medium according to claim 29, wherein the contact to said thermally conducting material is enhanced by a contacting medium.

31. (Previously Presented) The solid state laser medium according to claim 30, wherein said contacting medium is at least one of indium and thermally conducting glue.

32. (Previously Presented) The solid state laser medium according to claim 29, wherein the heat flow from the laser medium substantially has an one-dimensionality.

33-39. (Canceled).

40. (Previously Presented) A laser means for producing an elliptical high aspect ratio spot, comprising:

a diode pumping array with a plurality of emitters, wherein at least two of the emitters, each emitting a partial beam, are mounted in a horizontal array; and

optical means for producing a pump beam by imaging each single emitter into a same spot, wherein said optical means further includes:

an upstream optical means to collimate said partial beam in a vertical plane, and

a downstream optical means to collimate said partial beam in a horizontal plane, focus said partial beam in the vertical plane, and direct said partial beam to said spot, whereby images of said emitters in said spot form a smooth spot by an overlap of

said images in a sense that if some of said emitters die or degrade, said spot will not substantially change a spot intensity pattern.

41. (Previously Presented) A laser means for producing an elliptical high aspect ratio spot, comprising:

a pumping array with a plurality of emitters wherein at least two of the emitters, each emitting a partial beam, are mounted on a horizontal array; and

optical means for producing a pump beam by directing each partial beam to a same spot as a partial beam that is collimated in at least one plane, wherein the optical means further includes:

a first cylindrical lens for collimating the strongly divergent pump light of said partial beam, wherein said first cylindrical lens is positioned nearby said emitters at a distance corresponding to the focal length of the first cylindrical lens; and

a first lens for collimating said partial beam in a horizontal plane and focusing said partial beam in a vertical plane and directing said partial beam to said spot, wherein said first lens is positioned at a distance away from the diode pumping array corresponding to the focal length of the first lens.

42. (Previously Presented) A laser means for producing an elliptical high aspect ratio spot, comprising:

a diode pumping array with a plurality of emitters, wherein at least two of the emitters, each emitting a partial beam, are mounted in a horizontal array; and

optical means for producing a pump beam by directing each partial beam to a same spot as a partial beam that is collimated in at least one plane, wherein said optical means includes:

a first cylindrical lens for collimating a strongly divergent emission of an emitter into a beam in a first plane, wherein said first cylindrical lens is positioned near the diode array at a distance corresponding to the focal length of the first cylindrical lens, and

a second cylindrical lens for collimating said beam wherein said second cylindrical lens is positioned at a distance from the diode pumping array corresponding to the focal length of the second cylindrical lens.

43. (Canceled)

44. (Currently Amended) The diode-pumped laser as in ~~claim 43, wherein~~ claim 49, wherein the fundamental mode is strongly elliptical within the laser medium.

45. (Previously Presented) The diode-pumped laser as in claim 44, wherein the fundamental mode has an aspect ratio of >15:1.

46. (Previously Presented) The diode-pumped laser as in claim 44, wherein the pump light beam has an aspect ratio of >15:1.

47. (Currently Amended) The diode-pumped laser as in ~~claim 43, further~~ claim 49, further comprising cavity-forming means, whereby a reflective cavity element closest to an entrance face of said laser medium is not in direct contact with said entrance face.

48. (Canceled)

49. (Currently Amended) ~~The diode-pumped laser as in claim 48,~~ A diode-pumped laser operating in a fundamental mode, comprising:

a laser means for producing a high aspect ratio beam comprising a diode pumping array and optical means for imaging a pump light beam into a substantially asymmetrical spot with a smooth intensity profile; and

a laser medium which is excited by said pump light beam, wherein an axis of the pump light beam is positioned at least one of obliquely and vertically to an axis of the fundamental mode of the laser medium, wherein the laser medium is bonded to a heat sink on

a bottom side of the laser medium, wherein the pump light beam is incident on a top side of the laser medium, and wherein the fundamental mode of the laser medium is operated transversely to a heat flow in the laser medium.

50. (Currently Amended) The diode-pumped laser as in ~~claim 48, wherein~~ claim 49, wherein the laser medium is a thin disc laser medium.

51. (Currently Amended) The diode-pumped laser as in one of the ~~claim 48, wherein~~ claim 49, wherein the pump light beam has a double or multiple bounce configuration.

52. (Previously Presented) The diode-pumped laser as in claim 51, wherein a bottom surface of the top side of the laser medium is coated for reflection of the pump light beam.

53. (Currently Amended) The diode-pumped laser as in ~~claim 48, wherein~~ claim 49, wherein the laser medium is bonded to the heat sink by at least one of indium foil and glue.

54. (Previously Presented) The diode-pumped laser as in claim 53, wherein the glue comprises thermally conductive glue.

55. (Currently Amended) The diode-pumped laser as in ~~claim 48, further~~ claim 49, further comprising a modelocking device.

56. (Previously Presented) The diode-pumped laser as in claims 55, wherein the modelocking device further comprises at least one of a semiconductor saturable absorber mirror and a stably intracavity-converted continuous-wave laser.

57. (Currently Amended) The diode-pumped laser as in ~~claim 48, comprising~~ claim 49, further comprising a frequency conversion device.